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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,252	12/04/2001	Sarah Bronwen Rees	SYN-034-DV	3872
22847	7590	05/21/2004	EXAMINER	
SYNGENTA BIOTECHNOLOGY, INC. PATENT DEPARTMENT 3054 CORNWALLIS ROAD P.O. BOX 12257 RESEARCH TRIANGLE PARK, NC 27709-2257			ROBINSON, HOPE A	
			ART UNIT	PAPER NUMBER
			1653	

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/006,252

Applicant(s)

REES ET AL.

Examiner

Hope A. Robinson

Art Unit

1653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Applicant's election with traverse of Group I (claims 1-4 and 6-9) is acknowledged. Upon due reconsideration claims 4 and 9 were telephonically restricted from Group I, thus Group I as elected with traverse consists of claims 1-3 and 6-8.
2. The traversal is on the grounds that the claims are not subjected to a restriction requirement. Applicant states that the plant and DNA would not produce search burden. Applicant states that although the two groups are distinct the classification of 435 and 800 would need to be searched. Applicant's comments have been considered, however, are not persuasive. Group I consists of the DNA, vector and host cell, Group II consists of a plant having improved resistance, which as applicant agrees is separate and distinct from the DNA. The plant is a different product, a whole organism/biological system, per se. The DNA is different structurally, functionally and has a different mode of operation from the plant, which contains the DNA in a cell. The MPEP in chapter 800 indicates that restriction requirement is proper if inventions are independent and distinct (related and unrelated). The claimed DNA can be used in a hybridization assay or to make probes or to encode the protein. The plant contains many different DNAs inside the cells. The classification represents the status that the groups have obtained in the art which is different and is one way to demonstrate burden of search. A reference that anticipates or renders obvious the DNA may not render obvious or anticipate the claimed plant. However, if applicant is willing to make a statement on the record that a

Art Unit: 1653

single reference will anticipate or render obvious the two inventions then the two groups will be examined together. The above statements have fully addressed applicant's arguments. The restriction requirement is proper and is final.

***Claim Disposition***

3. Claims 1-10 are pending. Claims 1-3 and 6-8 are under examination.

4. The Drawings filed on December 4, 2001 have been accepted.

***Title***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title --- DNA Encoding Antifungal Proteins --- is suggested.

***Priority***

6. It is noted that the computer readable form of the sequence indicates that the instant application is a divisional of application number 09/077,951, now patent number 6,372,888 which claims priority to application number GB 9525474.4 filed December 13, 1995 and GB 9603065 filed December 12, 1996, however, the bibliographic data sheet

Art Unit: 1653

only lists one of the foreign documents and the first page of the instant specification does not list any of the foreign priority documents. Applicant is also reminded that a certified copy of both documents need to be submitted.

Correction is required.

### ***Claim Objection***

7. Claim 1 is objected to because the claim refers to Fig. 1 instead of a specific sequence with the corresponding sequence identifier, for example "SEQ ID NO:". The claim is also objected to because it is incomplete, does not have a (.) period. In addition, the claim is objected to because the specific sequence for RS-AFP2 is not recited in the claim (i.e., SEQ ID NO:9).

Claim 6 is objected to because the specific sequences are not recited in the claim for Rs-AFP2, Rs-AFP1, Rs-AFP3 and Rs-AFP4.

Correction of the above and compliance with the sequence rules is required.

### ***Specification***

8. The specification is objected to because of the following informalities:

The specification is objected to because page 2, line 10, discloses "Rs-AFP1 (SEQ ID NO:8)" and page 10, line 19, discloses Rs-AFP1 (SEQ ID NO: 19), which is confusing as this gives the appearance that the protein is in two different sequences, although

Art Unit: 1653

SEQ ID NO: 19 is the cDNA. It is suggested that applicant amend the specification to disclose on page 10, line 19, "The cDNA (SEQ ID NO:19) encoding Rs-AFP1 (SEQ ID NO:8)..".

Correction of the above and compliance with the sequence rules is required.

***Information Disclosure Statement***

9. The information disclosure statement filed on July 1, 2002 and December 4, 2001 fail to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP 609 because there are items listed on the information disclosure statement that are missing from the application. It is noted that applicant stated that copies the references on the IDS were filed with the 1449 form, however, none of the references were found in the application. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. A line has been drawn through the following items on the information disclosure statement: WO90/13224, WO 93/10363, WO87/03303 and all of the non-patent literature.

***Claim Rejections-Utility Rejections Under 35 USC § 101 And 35 USC 112, First Paragraph***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1 and 6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1 and 6 are drawn to a DNA encoding an antifungal protein, which reads on a product of nature. The claims should be amended to indicate the hand of the inventor, for example the insertion of "isolated" in connection with the DNA to identify a product not found in nature (see MPEP 2105).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite for the recitation of "selected form the group consisting of" instead of "selected from the group consisting of".

Art Unit: 1653

Claim 3 is indefinite for the recitation of "A biological system including the DNA sequence" because it is unclear what other component is "included in the biological system such that the protein is expressed". For clarity it is suggested that the claim is amended to recite, "A biological system comprising the DNA sequence of claim 1 and further comprises culturing a cell under conditions suitable for expression of the encoded protein". See also claim 8.

Claims 1 and 6 lack antecedent basis for "Rs-AFP-2" as the preamble recites "Rs-AFP2".

Claim 6 is confusing, as the preamble of the claim has a Markush listing of Rs-AFP2, Rs-AFP1, Rs-AFP3 and Rs-AFP4, and the claim then recites, wherein said protein contains at least one mutation selected from positions that are only found in Rs-AFP2, as the claim does not establish that the other three protein sequences can have the mutated positions.

### ***Conclusion***

12. No claims are presently allowable. However, applicant has allowable subject matter as the claims are free of the prior art. A search of commercial databases produced references that teach a DNA encoding an antifungal protein, however no references were found that teach or suggest mutations comprising a hydrophobic residue at position 16 other than a glycine, or a hydrophobic residue at position 5 or basic residues at positions 9 and 39 (see for example, U.S. Patent No. 5,773,696,



Art Unit: 1653

March 26, 1996 or WO 93/05153, March 18, 1993 or WO 94/16076, prior art made of record not relied upon).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hope A. Robinson whose telephone number is 571-272-0957. The examiner can normally be reached on Monday-Friday from 9:00 a.m. to 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S.F. Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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Hope A. Robinson, MS 

Patent Examiner